

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

SRM Number: 913a
MSDS Number: 913a
SRM Name: Uric acid

Date of Issue: 14 May 2012

Telephone: 301-975-2200
FAX: 301-948-3730
E-mail: SRMMSDS@nist.gov

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: This Standard Reference Material (SRM) is intended for use in the calibration and standardization of procedures for uric acid determinations employed in clinical analysis and for routine critical evaluation of the daily working standards used in these procedures. A unit of SRM 913a consists of one bottle containing 10 g of uric acid.

Substance: Uric acid

Other Designations: Uric oxide; 2,6,8-trioxypurine; purine-2,6,8-triol; 8-hydroxyanthine.

2. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 2 Fire = 0 Reactivity = 0

Major Health Hazards: Eye irritation.

Physical Hazards: There are no known physical hazards associated with this material.

Potential Health Effects (Acute and Chronic):

Inhalation: No information listed.

Skin Contact: No information listed.

Eye Contact: May cause irritation, and redness; repeated or prolonged exposure may cause conjunctivitis.

Ingestion: Ingestion of very large doses may cause a feeling of pressure in the head, tightness of the face, chest pains, and seizures. Chronic exposure may cause symptoms similar to acute exposure.

Listed as a Carcinogen/Potential Carcinogen

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	_____	<u>X</u>
In the International Agency for Research on Cancer (IARC) Monographs	_____	<u>X</u>
By the Occupational Safety and Health Administration (OSHA)	_____	<u>X</u>

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	CAS Number	EC Number (EINECS)	Nominal Concentration
Uric acid	69-93-2	200-720-7	100 %

EC Classification: Xi
EC Risk (R No.): 36
EC Safety (S No.): 26, 46

4. FIRST AID MEASURES

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Seek medical attention if necessary.

Skin Contact: Rinse affected area with soap and water for at least 15 minutes. Seek medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Seek medical attention if necessary.

Ingestion: If swallowed, seek medical attention.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Negligible fire hazard.

Extinguishing Media: Use extinguishing agents appropriate to surrounding fire.

Fire Fighting: Avoid inhalation of combustion by-products.

Flash Point (°C): Not applicable.

Autoignition Temp. (°C): Not applicable.

Flammability Limits in Air

UPPER (Volume %): Not applicable.

LOWER (Volume %): Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Collect spilled material in appropriate container for proper disposal.

Disposal: Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards.

Safe Handling Precautions: Minimize dust. See Section 8 "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: No occupational exposure limits established.

Ventilation: Local exhaust ventilation system.

Respirator: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29 CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye Protection: Wear safety goggles. An eyewash station and drench shower should be readily available near the handling and use areas.

Personal Protection: Chemically resistant gloves and clothing are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Colorless to white crystalline powder, odorless.

Molecular Formula: $C_5H_4N_4O_3$

Molar Mass (g/mol): 168.11

Specific Gravity (water = 1): 1.9

Water Solubility: Slightly soluble.

Melting Point: Decomposes.

Boiling Point: Decomposes.

Solvent Solubility: Soluble in glycerol, alkali hydroxide solutions, and concentrated sulfuric acid.

pH: Acidic in solution.

10. STABILITY AND REACTIVITY

Stability: X Stable Unstable

Stable at normal temperature and pressure.

Conditions to Avoid: Avoid generating dust. Dust may irritate eyes.

Incompatible Materials: Oxidizing materials.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Hydrogen cyanide.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation _____ Skin X Ingestion

Toxicity Data: No data listed.

Health Effects: See Section 2 "Hazards Identification" for potential health effects.

Target Organs: Eye irritant.

Mutagen:

The following end points have been published by Registry of Toxic Effects of Chemical Substances (RTECS):
Human, 10 mmol/L

Reproductive Effects:

The following end points have been published by RTECS:
Rat, Oral TDLo: 5040 g/kg (male 4 wk)

Medical Conditions Generally Aggravated by Exposure: No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No data listed.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: This material is not regulated by DOT or IATA.

15. REGULATORY INFORMATION

U.S. REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.
SARA Title III Section 302 (40 CFR 355.30): Not regulated.
SARA Title III Section 304 (40 CFR 355.40): Not regulated.
SARA Title III Section 313 (40 CFR 372.65): Not regulated.
OSHA Process Safety (29 CFR 1910.119): Not regulated.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH:	Yes
CHRONIC HEALTH:	No
FIRE:	No
REACTIVE:	No
PRESSURE:	No

STATE REGULATIONS

California Proposition 65: Not listed.

CANADIAN REGULATIONS

WHMIS Information: Not provided for this material.

EUROPEAN REGULATIONS

EC Classification: Xi - Irritant.

EC Risk Phrases:

R36 – Irritating to eyes.

EC Safety Phrases:

S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

246 – If swallowed, seek medical advice immediately and show this container of label.

NATIONAL INVENTORY STATUS

U.S. Inventory (TSCA): Uric acid is listed.

TSCA 12(b), Export Notification: Not listed.

16. OTHER INFORMATION

Sources: ChemADVISOR, Inc., MSDS *Uric acid*, 14 March 2012.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.